Allergy Abstracts

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Asthma and Hay Fever

Bronchial Asthma in Small Community Hospitals Five-Year Survey. Lipman, W. H.: Ann. Allergy **8**: 618, 1950.

A survey of patients with bronchial asthma was conducted in 2 small hospitals in a midwestern industrial city of 50,000 population. The survey covered 157 patients admitted over a 5 year period by the general practitioners who have been treating these patients. One hundred of these patients received some kind of narcotic therapy. Among the latter group, 9 deaths occurred; 3 followed administration of morphine, 5 followed administration of pantopon, and 1 followed administration of dilaudid. Epinephrine was used as a therapeutic agent in 94 cases and aminophylline in 68. "This survey suggests the need of great improvement in both diagnosis and treatment of bronchial asthma by general practitioners." E. W.

Experimental Asthma in Man. Herxheimer, H.: Deutsche med. Wchnschr. **76**: 1171, 1951.

The author studied the direct action of allergenic substances (pollens, fungi, animal danders, and house dust) on the bronchi. The apparatus included a spirometer with a drum for continuous recording of air movements connected to an oxygen cylinder and flowmeter. A side circuit attached to the inspiratory tube of the spirometer led to glass nebulizers filled with different inhalant allergens which could be used singly and in quick succession. Depending upon the amount of allergen-aerosol inhaled, typical attacks of bronchial asthma could be induced in the subjects. The bronchial reaction was considered to be a more reliable index for diagnosis than the cutaneous

test. Bronchial hyposensitization, accomplished by the introduction of gradually increasing amounts of allergen-aerosol, was found to be superior to hyposensitization by injection.

The aerosol technique is recommended for the study of the mechanics of the asthmatic attack and for the evaluation of antiasthmatic drugs. H.

The Prevention of Infectious Asthma. Fishman, A. E.: Ann. Allergy **8**: 684, 1950.

The prophylactic administration of sulfonamides to 20 patients with recurrent infectious asthma and/or bronchitis over a period of from 7 to 9 months resulted in a marked diminution in the amount of asthma or bronchitis these patients experienced. No adverse reactions were encountered. Allergic management of the patients was continued throughout the study. No control series was run. E. W.

Cutaneous Sequelae Following Treatment of Bronchial Asthma With Inorganic Arsenic. Report of Two Cases. Pascher, F., and Wolf, J.: J. A. M. A. **148**: 734, 1952.

Two patients treated with an antiasthmatic mixture containing Fowler's solution developed evidence of arsenical dermatitis. The first patient, a 58-year-old man, had taken the medication for about 3 months before a papular erythematous eruption and hyperpigmentation were noted. The second patient took the medication for about 4 months before he developed keratosis, keratoderma, and hyperpigmentation. F.

Pathophysiologic Studies of Pollen Allergy. Schleinzer, R.: Acta Allergologica **4**: 7, 1951.

Forty patients with proved pollen allergy were tested with aerosolized pollen extracts during a pollen-free period. The tests were conducted in a room with controlled temperature and humidity while the patients were at rest and in a fasting state. Alveolar oxygen and carbon dioxide tensions, arterial oxygen saturation, and rectal temperature were recorded throughout the experiments.

Thirty per cent of the patients studied showed a striking decrease in the arterial oxygen saturation and a decrease in rectal temperature of from 0.2 to 1.0 degree. There was an increase of the respiratory minute-volume, which was associated with a decrease in the depth of respiration together with an increase of respiratory frequency. In 40 per cent of the cases, only a negligible decrease of the oxygen saturation occurred; although a striking increase in the respiratory minute-volume was recorded. Two-thirds of these patients showed a decreased temperature. In 20 per cent of the patients studied, the oxygen saturation decreased only from 2 to 4 per cent, with little change occurring in the respiratory data. Many of these patients showed an increase in rectal temperatures.

No difference could be detected in the early stages of the experiment between hay fever patients and pollen asthmatics. After a partial decrease of the oxygen saturation, the effects of oxygen lack produced by the asthmatic attack were noted. Prior to desensitization treatment, repeated tests with aerosolized pollen extracts produce the same pathophysiologic findings. H.

Dermatology

Penicillin Sensitivity Simulating Atopic Dermatitis. Cohen, S. G.: J. Pediat. **38**: 741, 1951.

A 2-year-old child developed clinical signs typical of atopic dermatitis several days after the oral administration of penicillin. No other manifestations of allergy were present. The past history and the family history were negative for allergy. The dermatitis cleared in one week under therapy. One month later, the dermatitis recurred 24 hours after an injection of penicillin. The rash again had the appearance and distribution of atopic dermatitis. The condition subsided within a week. This type of penicillin sensitivity reaction in a nonatopic child is regarded as an unusual occurrence. J. S.

Influence of Antihistamines on Skin Tests With Bacterial and Fungous Antigens. Epstein, S.: J. Invest. Dermat. **17**: 165, 1951.

Patients were given intracutaneous tests with a combination of an antihistamine and one of the following bacterial or fungous antigens: streptococcic immunogen, streptococcus hemolyticus vaccine, staphylococcic toxoid, staphylococcic toxoid immunogen, trichophytin, and oidiomycin. The results showed that the delayed reactions were not inhibited by antihistamines but that the immediate flare responses to staphylococcic toxoid were markedly reduced. The immediate response to the other bacterial and fungous antigens was not influenced. It is suggested that histamine is an important factor in the response which occurs following skin testing with either fungous or bacterial antigens. R. W.

Palpebral Dermatitis Following the Use of Antistine Eye Drops. Guerrant, J. L., and Hollifield, W. C.: Am. J. Ophth. **34**: 1318, 1951.

Three patients developed severe dermatitis of the eyelids after the instillation of Antistine ophthalmic solution into the conjunctival sac. In 1 patient, the symptoms developed within one month after first using the drug. In the other 2, the dermatitis developed after using the medication for 13 months. All had conjunctivitis or dermatitis of the eyelids before using Antistine, but, in each case, the use of this medication seemed to make the original lesion worse or more extensive. In 2 of the patients, patch tests with Antistine gave positive reactions. In the third, although patch reactions were negative, there was little doubt that the drug was the causative factor. Although useful for the symptomatic treatment of certain allergic and inflammatory conditions of the eyes, Antistine may sensitize the skin or conjunctiva and should therefore be used only when definitely indicated. C.

Occurrence of Contact Dermatitis From Oil Soluble Gasoline Dyes. Lamb, J. H., and Lain, E. S.: J. Invest. Dermat. **17**: 141, 1951.

Three cases of contact dermatitis due to sensitivity or cross-sensitivity to the dyes used in coloring gasoline were encountered. Patch tests performed with various gasoline dyes gave positive reactions. Each patient had had previous contact exposure to azo-dyes or to related substances. It is suggested that azo-dyes are capable of producing primary sensitizations and are also capable of eliciting reactions of cross sensitization with chemically related compounds. R. W.

Otorhinology and Ophthalmology

Modern Trends in Otolaryngology With Special Emphasis on Allergy. Ashley, R. E.: Arch. Otolaryng. **55**: 253, 1952.

Allergy is regarded as a phenomenon of autonomic imbalance which results from various types of stimuli (protein, emotional, traumatic) in a system in which the threshold of tolerance is lower than average. Increased permeability of the blood vessels and cells leads to loss of fluid and electrolytes with resultant symptoms referable to the nose, throat, and ear. Nasal obstruction, postnasal discharge, chronic cough, and symptoms suggesting sinus infection are very common. A diagnosis of allergy may be made on the presence of a personal or family history of allergy and the occurrence of large numbers of eosinophiles in the secretions and tissues. C.

Influence of Fundamental Concepts in Allergy Upon Specific Problems in Otolaryngology. Weille, F. L., and Richards, A. B.: Arch. Otolaryng. **54**: 231, 1951.

In order to determine the effects of nasal surgery on patients with asthma, 197 asthmatics who had undergone surgery were followed from 6 months to 20 years, the average follow-up time being 8.7 years. The asthma had improved in 52 per cent of patients and had become worse in 18 per cent. The nasal condition had improved in two-thirds of the individuals and had become worse in 5 of the 197 patients. The results in asthma were slightly better following conservative surgical procedures than after radical surgery. The longer the follow-up, the better were the over-all results both in asthma and in nasal conditions. C.

Miscellaneous Allergies

An Unusual Allergic Reaction to Penicillin. A Case Report. Leibowitz, H., and Schwartz, E.: Ann. Allergy **8**: 668, 1950.

Severe paroxysms of asthma occurring within 2 or 3 hours following aerosol therapy with penicillin were noted in a 58-year-old male patient with bronchial asthma. The same reaction was observed on 4 different occasions in this patient. Following the last treatment, the patient appeared to be moribund. When tested intracutaneously with penicillin in a dilution of 1,000 units per c.c., the patient developed an immediate marked local reaction and a severe erythematous papular eruption over the medial aspect of the arm. This was accompanied by a severe constitutional reaction. Passive transfer studies gave negative results. E. W.

Allergy to Castor Bean Dust With Report of a Case. Kaufman, M.: Ann. Allergy **8**: 690, 1950.

Marked sensitivity to castor bean dust was encountered in a 29-year-old male Negro truck driver. This patient developed all the symptoms of a generalized constitutional reaction whenever he came in contact with castor bean dust. When patch tested with castor bean meal, he developed a large wheal and a papular reaction at the site of contact. A scratch test performed with castor bean dust gave a positive reaction. Essentially negative reactions were obtained to skin tests with other inhalants. E. W.

Anaphylactic Shock Following Intravenous Administration of Vitamin B Complex. Chitwood, W. R., and Moore, C. D.: J. A. M. A. **148**: 461, 1952.

Intravenous administration of vitamin B complex to a 52-year-old man was followed almost immediately by a circulatory collapse, feeling of impending death, and cessation of respiration. Intravenous administration of epinephrine and artificial respiration with oxygen were effective in reviving the patient. An electrocardiogram taken about 90 minutes after the incident showed evidence of coronary insufficiency. The patient had had numerous parenteral injections of vitamin B complex during the preceding year. Several months prior to the reported incident, the patient had experienced dizziness and weakness after an intramuscular injection of the B complex, but subsequent intramuscular and intravenous injections of this substance had been tolerated without ill effect. F.

Löffler's Syndrome. Scheer, E. H.: Arch. Pediat. **68**: 407, 1951.

Eleven instances of pulmonary infiltration were encountered among a group of 35 children, ranging in age from 6 months to 13 years, who had parasitic infestations. Seven of the patients with lung infiltration had a blood eosinophilia of over 4 per cent, 3 had an eosinophilia of 3 per cent. After all other diagnoses had been excluded, at least 3 of the 35 cases could be considered to be definite and 3 probable cases of Löffler's syndrome. The appearance of lung infiltration in patients with parasitic infestations seems to depend upon the development of an allergic response to the protein of the parasites. F.

Anthocyaninuria and Beet Allergy. Zindler, G. A., and Colovos, G. C.: Ann. Allergy **8**: 603, 1950.

Among 28 cases with anthocyaninuria, 26 were associated with beet allergy. The allergic manifestations included rhinitis, asthma, coughing, indigestion, belching, distension, abdominal pain, itching, headache, myalgia, facial flushing, and chilly sensations. Two patients had anthocyaninuria only when beets were ingested in combination with other foods known to produce allergic symptoms. Three patients, in whom the experimental feeding of beet produced allergic symptoms, failed to show anthocyaninuria after eating the offending vegetable. In ultraviolet absorption studies, the pigment of the colored urine seemed to be related to that of betanin spectrographically. Nine normal individuals who ate large quantities of beets failed to show anthocyaninuria. The experimental feeding of beet sugar to 5 of the patients with beet sensitivity elicited allergic symptoms. It was suggested that the absorption of beet pigments from the intestinal tract occurs only during the allergic reaction. Hence, anthocyaninuria is a valuable sign in the diagnosis of beet allergy. E. W.

Quinidine Allergy. Christensen, R., and Andreasen, A. P.: Acta Allergologica **4**: 37, 1951.

A 42-year-old woman with rheumatic fever developed a fever of 39° C., edema of the eyes, and a generalized pruritic scarlatiniform eruption after 35 days of treatment with quinidine. Quinidine was discontinued 19 days later when a hemorrhagic diathesis was noted. A diagnosis of thrombocytopenic purpura was made at this time. After the quinidine was discontinued, the blood picture returned to normal within one week. Six weeks later, a provocative test dose of 0.2 Gm. of quinidine was given. Within 5 hours, the

patient developed "facial congestion," restlessness, edema around the eyes, a generalized scarlatiniform eruption, and a rise in temperature. Auricular fibrillation, lasting for 24 hours, also occurred at this time. No effect on the thrombocyte count was noted.

Five other cases manifesting allergy to quinidine were reviewed by the authors. H.

Anaphylaxis

Effect of Cortisone and ACTH During Sensitization on Eosinophils and Anaphylaxis in Guinea Pigs. Dews, P. B., and Code, C. F.: Proc. Soc. Exper. Biol. & Med. **77**: 141, 1951.

ACTH and cortisone have been reported to have no effect on the anaphylactic reaction in fully sensitized guinea pigs. The authors studied the influence of ACTH and cortisone on development of sensitiveness to egg white in a series of guinea pigs. The animals were given ACTH or cortisone for a period beginning from 3 to 4 days prior to sensitization and extending from 12 to 27 days thereafter. Each guinea pig received 4 successive daily doses of the antigen and tests for sensitivity were performed from 3 to 7 weeks later. ACTH was given to one-third of the animals, cortisone to another third, and the remaining third were untreated. ACTH and cortisone had no effect on the severity of the subsequent anaphylactic reactions. They did, however, cause a pronounced and sustained eosinopenia in both male and female animals. M. S.

Passive Sensitization of Human Skin by Sera of Guinea Pigs Anaphylactically Sensitized to Ovalbumin. Sherman, W. B., and Caulson, E. J.: Proc. Soc. Exper. Biol. & Med. **77**: 245, 1951.

All sera obtained from guinea pigs sensitized with ovalbumin by single or multiple subcutaneous or intraperitoneal injections showed anaphylactic antibody titers, but failed to passively sensitize human skin. Other ovalbumin antisera were obtained from 7 guinea pigs that had been sensitized with a single subcutaneous injection of antigen and had survived anaphylactic shock, either once or twice. All these sera induced passive anaphylactic shock. Antisera from 3 of these 7 animals passively sensitized human skin in dilutions of 1:10 to 1:100. There was no apparent relationship between the titers of anaphylactic antibody and skin-sensitizing capacity. Since no antisera were obtained from these animals before the shocking injection, it was difficult to evaluate the effect of the challenging injection on the formation of skin-sensitizing antibody. On the basis of the above studies, the authors speculate that skin sensitization and anaphylaxis are mediated by different antibodies. B. S.

Allergenic Property of Scarlatinal Toxin. Boroff, D. A.: J. Bact. **62**: 627, 1951.

Scarlatinal toxins isolated from culture filtrates of group A streptococci have the capacity to sensitize the skin of the rabbit. Twenty-four hours following an initial intracutaneous injection, a second injection with homologous or heterologous toxin produced a significantly greater reaction. When substances other than scarlatinal toxin were used for the second injection, no increase in reactivity was noted, thus indicating the specificity of the reaction.

Sensitized rabbits also showed greatly accelerated reactivity to the toxin, a maximal skin reaction appearing from 4 to 6 hours after the injection in-

stead of after the usual interval of 18 or 24 hours. The wheal and erythema were more pronounced and persisted longer than the reaction in nonsensitive animals. It was also noted that rabbits injected with any of the 4 toxins used in the experiment had considerable kidney damage. Other organs and tissues were unaffected. Rabbits injected with neutralized or treated toxin failed to show the increased skin activity and the kidney damage. The kidney lesions, therefore, are probably not allergic in nature. F.

Cardiac Lesions in Rabbits Following Injections of Horse Serum. Crawford, T., and Nassim, J. R.: J. Path. & Bact. **63**: 619, 1951.

Ninety young mature rabbits were given repeated injections of horse serum and were sacrificed from 4 to 8 days after the last injection. Fifty-eight per cent of the animals showed some degree of vascular lesion. The necrotic arterial lesions were strikingly similar to lesions of polyarteritis nodosa observed in human beings. The myocardial pathology resembled the lesions encountered in human beings suffering from rheumatic carditis. H.

Pharmacology, Physiology, and Pathology

Histamine Release in Rabbit Blood by Simple Molecules, Inhibition and Reaction Rate Studies. McIntire, F. C., Roth, L. W., and Sproull, M.: Am. J. Physiol. **167**: 233, 1951.

The release of histamine from rabbit blood-formed elements is rapidly affected by two types of compounds: (1) the long chain aliphatic primary amines, and (2) the quaternary pyridinium esters with large aliphatic groups attached to the nitrogen atom. The present study demonstrated that histamine is rapidly and completely released by octadecylamine (ODA) and N-(n-Hexadecyl)-B-carbomethoxy pyridinium (QPE). Minor changes in the chemical structure of the 2 compounds diminished or even abolished their histamine releasing activity. The histamine releasing activity of either compound was in no way related to any hemolytic activity and was therefore not a phenomenon which accompanied the general destruction of blood cells by surface active agents.

Many compounds closely related to ODA and QPE not only failed to effect the release of histamine, but actually inhibited its release. The experimental data suggested that the inhibition was of the competitive type. It was also noted that a "cross inhibition" between the two series of compounds as well as certain degree of type specificity occurs.

In most instances, 1×10^{-4} molar of ODA released nearly all and 2 to 4×10^{-5} ODA released about one-half of the histamine. The release took place rapidly. Even when the concentration of ODA was sufficient to release only one-half of the maximum amount of histamine, the reaction proceeded rapidly and in 2 to 3 minutes reached a point beyond which very little additional histamine was released. These findings, along with the fact that added free histamine did not inhibit the release action, indicate that an enzymatic action is not involved. F.

Effects of Adrenocorticotropic Hormone and Cortisone in Patients With Tuberculosis. Le Maistre, C. A., Tompsett, R., Muschenheim, C., Moore, J. A., and McDermott, W.: J. Clin. Investigation **30**: 445, 1951.

Seven patients with far-advanced tuberculosis, 4 of whom had active laryngeal tuberculosis, were treated with 100 mg. of cortisone or ACTH daily

for 10 days. In 5 patients, the signs and symptoms of acute illness abated within 6 or 8 hours. Symptoms returned abruptly on cessation of therapy and, in 4 patients, were more severe than formerly. Healing of the laryngeal lesions was observed and epithelium grew over the ulcerated area. In 5 cases, lung lesions became radiologically more translucent under treatment and more dense when treatment was stopped. In none of these cases was dissemination of the disease encountered. Reversal of a positive cutaneous reaction to tuberculoprotein occurred in 3 of 6 cases tested and the reactions remained negative for from 3 to 4 weeks after cessation of hormone therapy, although clinical signs of illness rapidly reappeared. Serum gamma globulin in one patient decreased under therapy but reached pretreatment levels 4 weeks afterward and then increased even further. No change was noted in the other cases while under cortisone, but 3 weeks after its administration 3 patients showed significant increases in both serum gamma globulin and in the titer of tuberculin hemagglutinating antibodies. Prolonged hormone administration to one patient was attempted, but after 4 consecutive weeks of therapy, cortisone and ACTH failed to control fever, cough, and prostration. This patient died. Another patient died while being treated, although fever and prostration did not recur. Neither of these patients showed evidence of recent dissemination of their tuberculosis at autopsy. Cultures of tubercle bacilli from these patients failed to show any alteration in their staining or growth characteristics. It is concluded that the dramatic changes observed are due solely to an effect of the cortical hormones on the host. K.

Leukocyte Response to Stress in Normal and Adrenalectomized Rats Pretreated With Ascorbic Acid. Bacchus, H.: Proc. Soc. Exper. Biol. & Med. **77**: 167, 1951.

Adrenalectomized and sham-adrenalectomized rats were treated with either ascorbic acid or saline. Six to 8 hours after treatment, all animals were given a subcutaneous injection of epinephrine. The leukocytic response to epinephrine differed from that of the sham-adrenalectomized (normal) animals in that the former group showed a more pronounced increase in the number of circulating lymphocytes. The eosinopenia noted 3 hours after epinephrine in the normal rats was prevented by pretreatment with ascorbic acid. Ascorbic acid-treated normal rats and saline-treated adrenalectomized rats showed a rise in the number of circulating eosinophiles 3 hours after the stress. The ascorbic acid-treated adrenalectomized animals developed the eosinophilia after stress, but this was delayed up to 24 hours. These studies demonstrate that only the eosinophiles are related to the action of ascorbic acid. Furthermore, ascorbic acid may influence the leukocyte response even in the absence of the adrenal. B. S.

Noradrenaline and the Suprarenal Medulla. Shepherd, D. M., and West, G. B.: Brit. J. Pharmacol. **6**: 665, 1951.

Adrenal glands, obtained from human beings, guinea pigs, rabbits, cats, dogs, and fowl were assayed for their adrenal extract and noradrenaline contents by paper chromatography and by their action on the blood pressure and nictitating membrane of a spinal cat. Human adrenal extracts yielded values of 209 mcg. adrenalin and 31 μg. of noradrenaline per gram of tissue. The medulla contained 5 times as much noradrenaline as the cortex.

Results of experiments on embryonic tissues in the adrenal glands of animals and man indicate that noradrenaline is present in high proportion in contrast to adrenalin. The noradrenaline is contained mostly in the medulla. In

adult glands of the animals, adrenal extract appears in much higher proportion; in animals where the cortex is very large, e.g., in rabbits and guinea pigs, noradrenaline is almost nonexistent. The proportion of adrenalin in the gland seems to be dependent on the size of the cortex. The adrenal extract content of glands in the exhausted state may be about 25 per cent of the normal value. H.

Alteration of In Vivo Propulsive Intestinal Motility by Antihistaminic Drugs. Holtkamp, D. E., Whitehead, R. W., and Hill, R. M.: Proc. Soc. Exper. Biol. & Med. **77**: 352, 1951.

Rats were injected subcutaneously with Benadryl, Pyribenzamine, Histadyl, Antistine, or Thephorin at 9 hours, 5 hours, and 30 minutes, respectively, prior to the feeding of a carmine dye. The propulsive aspect of intestinal motility was measured by observing the time from ingestion of carmine to its defecation. In large doses, Benadryl produced a decrease in intestinal motility, but in small doses it produced an increase in motility. Antistine in large doses also produced a decrease in intestinal motility, but had no effect in small doses. When Thephorin, Histadyl, and Pyribenzamine were fed in large doses, the animals became toxic and refused to eat. Thephorin, in small doses, increased intestinal motility, while Pyribenzamine and Histadyl, in similar doses, produced no significant effect. B. S.

Evaluation of Certain Antihistaminics for Use in Auricular Fibrillation. McCawley, E. L., Weston, G. A., and David, N. A.: J. Pharmacol. & Exper. Therap. **102**: 250, 1951.

In the isolated rabbit auricle a series of antihistaminics, including Benadryl, Pyribenzamine, Decapyrn, Chlortrimeton, and other analogs, were found to be more potent in lengthening the refractory period than quinidine, milligram for milligram. There was no correlation either between antihistamine activity or acute toxicity of the drugs and their effect on muscular irritability. The degree of auricular refractoriness varied directly with the log of the concentration of the drugs. The time of maximal effectiveness varied with the drug used. When isolated auricular tissue was made to fibrillate by mechanical trauma, the addition of Benadryl slowed the concentrations and brought about regular rhythm after a 20 minute lag. Fibrillation induced by aconitine could be slowed by Benadryl or quinidine, but the rhythm remained irregular. It is implied that a drug which is capable of prolonging the refractory period should theoretically be capable of causing atrioventricular blocks and bundle branch conduction disturbances. K.

High Histaminase Activity of Human Blood in Pregnancy and the So-Called Placenta. Unspaa, V. J.: Ann. med. exper. et biol. Fenniae. **29**: 81, 1951.

Blood from pregnant women and the amniotic fluid were tested for histamine and histaminase activity. The amniotic fluid samples yielded histamine in amounts varying from 3.0 to 3.8 mg. per cent, while the blood samples gave amounts ranging from 1.6 to 3.8 mg. per cent. A strong histaminolytic activity could be demonstrated in both human amniotic fluid and blood plasma. The histaminolytic power of the amnion was 19.3 per Gm. per hour, that of the chorion 19.3 mg. per Gm. per hour, and that of the decidua 210 mg. per Gm. per hour. The author suggests that the amniotic epithelium may actively produce histaminolytic enzyme and transfer it to the amniotic fluid. H.

Kinetic Studies on Immune Hemolysis. II. The Reversibility of Red-Cell-Antibody Combination and the Resultant Transfer of Antibody From Cell to Cell During Hemolysis. Bowman, W. M., Mayer, M. M., and Rapp, H. J.: J. Exper. Med. **94**: 87, 1951.

A small amount of hemolytic antibody from rabbit anti-sheep red cell antiserum was allowed to react with red cell stromata. Intact red cells and complement were then added to the system. The rate of hemolysis was studied over a period of several hours. It was determined that antibody dissociates at an appreciable rate from red cell stromata even without the presence of complement. Individual antisera vary with respect to dissociability of antibody. The antibody which dissociates can form new complexes with either the intact red cell or the stromata present in a partially lysed mixture and as lysis progresses increasing amounts of stromata are available to bind the antibody so that the rate of lysis of intact cells eventually becomes negligible. Transfer of antibody also can occur after interaction of stromata-antibody complex with complement. These observations lend support to the concept that hemolytic antibody behaves like an enzyme acting on the substrate at the red cell surface and so alters the substrate that in the presence of complement lysis of the corpuscle occurs. Complement is used up in the reaction. K.

Experimental Investigations of the Relationships Between Plasma Cells and Antibody Formation (Phase Contrast Microscope). Moeschlin, S., Pelaez, J. R., and Hugentobler, F.: Acta haemat. **6**: 321, 1951.

Rabbits, sensitized with a 3 c.c. injection of typhoid-paratyphoid vaccine, were given a larger intravenous dose 3 weeks later, at which time a positive agglutination titer was demonstrable. The second dose was followed by a strong plasma cellular reaction in the red pulp of the spleen and a sharp rise in the blood agglutinin titer. The animals were then sacrificed at various intervals and spleen specimens were studied under the phase contrast microscope.

ACTH or cortisone, administered simultaneously with the reinjection of the vaccine, did not inhibit the plasmocellular reaction or the production of antibodies. The authors concluded that the plasmocellular reaction is not connected with the actual inflammation but represents the functional stage of antibody production. When ACTH or cortisone was injected daily for 8 days before the vaccine reinjection, a marked decrease in both the plasmocellular reaction and antibody production was noted.

These investigations support the theory that plasma cells, rather than lymphocytes, are the sites of origin of specific antibodies. The cell changes observed were correlated with the formation of certain globulins. H.

Failure of Cortisone to Affect Rate of Disappearance of Antibody Protein. Fischel, E., Stoerk, C., and Bjrneboe, M.: Proc. Soc. Exper. Biol. & Med. **77**: 111, 1951.

The authors studied the rate of disappearance of passively administered antibody from the circulation of cortisone-treated and normal rabbits. Four rabbits were given concentrated rabbit antipneumococcal globulin solution intravenously. Two of the animals were given cortisone for 3 days preceding the injection of the globulin solution and for 11 succeeding days. The remaining 2 animals served as controls. The amounts of antipneumococcal antibody nitrogen remaining in the rabbits over a 10 day period revealed no difference in the rate of disappearance of antibody protein between the cortisone-treated

and control animals. These findings are explainable on the hypothesis that cortisone inhibits antibody globulin synthesis, since no evidence for accelerated catabolism of antibody protein was found. M. S.

Mode of Action of Histamine Desensitization. Ambrus, J. L., Ambrus, C. M., and Harrisson, J. W. E.: Am. J. Physiol. **167**: 268, 1951.

When a single large dose of histamine was given to guinea pigs under the protection of an antihistamine (Neoantergan), desensitization of the same order as that produced by the multiple progressively increasing dose method was attained. This suggested that the total dose administered is the chief factor in histamine desensitization. No substance with antihistamine activity could be demonstrated in the organs of histamine-desensitized animals, but extracts of these organs exhibited a higher histamine-like activity on the guinea pig ileum than did extracts from the organs of control animals. Mixtures of histamine and histaminase incubated until all histamine was destroyed did not possess degradation products which acted as competitive antagonists toward histamine.

In view of these findings, the authors conclude that residual histamine is bound in the cells on a nontoxic but protective form and thus acts as a protective agent against subsequent exposure to histamine. F.

Comparison of Leukocyte Response to ACTH and Bacterial Pyrogen. Soylemezoglu, B., and Wells, J. A.: Proc. Soc. Exper. Biol. & Med. **77**: 43, 1951.

Normal and adrenalectomized dogs were injected intravenously with a pyrogen preparation (Pyromen) or with ACTH. Total white cell and eosinophil counts were done before and at frequent intervals for 6 hours after the injection of ACTH or Pyromen. Both agents induced a leukopenia, within the first 2 hours, which was followed by a leukocytosis. These changes were more marked with the pyrogenic material. Adrenalectomy completely abolished the ACTH-induced leukocyte changes. The pyrogen-induced leukopenia was not influenced by adrenalectomy. The leukocytosis induced by pyrogen, following adrenalectomy, was somewhat less than that observed in the control group of animals. This was attributed to the fact that the adrenalectomized animals, being more susceptible to the lethal action of pyrogens, succumbed before the sixth hour of observation, when leukocytosis was beginning to be marked in the normal animal. The ACTH-induced eosinopenia was reduced by adrenalectomy. However, eosinopenia induced by pyrogen was not reduced by removal of the adrenals. Although the leukocyte response to bacterial pyrogen is superficially similar to that produced by ACTH, the above findings indicate that pyrogens produce their effects by mechanisms independent of pituitary adrenal discharge. These findings also cast doubt upon the specificity of eosinopenia per se as an indicator of pituitary adrenal discharge. B. S.

Studies on the Pathology of Neuro-Allergic Diseases: (3) The Effect of Antihistamines on the Oxygen Metabolism of Various Living Tissue-Cultures. (4) The Effect of Histamine and Antihistamines on the Oxidative Mechanism of the Central Nervous System. Huszak, I., and Domonkos, J.: Acta Allergologica **4**: 47, 53: 1951.

The effect of various antihistamines on cat and horse brain and on spinal cord material was studied in the Warburg apparatus. The antihistamines in-

hibited to an appreciable degree the uptake of oxygen in the gray substance of the central nervous system, but had no effect upon the oxygen uptake of the white substance, of the liver tissue, or of the muscle tissue.

The antihistamine drugs influence the oxidative mechanism by interfering with the iron-containing respiratory catalysts, especially the cytochromes. The antihistamines inhibit the reduction phase of the cytochromes. These inhibitory effects can be abolished by small doses of histamine. H.

In Vitro Action of Cortisone on Vasoconstriction Due to Histamine. Smith, D. J.: Proc. Soc. Exper. Biol. & Med. **77**: 534, 1951.

By angioplethysmokymographic technique, the curves of constriction and recovery of the swine carotid artery following the addition of histamine to the perfusate were studied. With repeated test doses of histamine, the recovery phase became increasingly prolonged. When cortisone, in concentration of one or two parts per million, was added to the perfusate at this point, the recovery of the vessel from vasoconstriction due to histamine was accelerated. Cholesterol in propylene glycol and propylene glycol alone were ineffective in altering the histamine response. Segments of the same vessel, which were not perfused with cortisone, failed to show the accelerated recovery from histamine. It is suggested that the mechanism by which cortisone acts in these studies is via the histamine inactivating enzyme systems. B. S.

Miscellaneous

Eosinophil Levels as an Index of Adrenal Responsiveness. Factors That Affect Value of Eosinophil Counts. Bonner, C. D.: J. A. M. A. **148**: 634, 1952.

In 1947, Rud noted that there is frequently a drop in the eosinophil count during the forenoon. Although this drop was usually independent of food intake, fasting seemed to have a causal effect in a significant number of cases. The present author, in re-evaluating the chamber and slide methods of eosinophil counting, observed that when counts were done between 9 A.M. and 1 P.M., 12 per cent of fasting subjects had spontaneous drops of more than 50 per cent and 30 per cent had drops of from 20 per cent to 50 per cent. Sixteen per cent of nonfasting patients had drops of from 20 per cent to 50 per cent and 8 per cent had falls below 50 per cent. When the same group of patients were fed on their regular schedules and counts were done from 1 P.M. to 5 P.M., only 12 per cent showed drops between 20 per cent and 50 per cent and none showed drops of more than 50 per cent.

In comparing the accuracy of the smear and chamber methods, it was found that when only 2 chambers were counted and only 400 cells were included in the smear, results were generally inconsistent, but were more constant with the chamber method. When 4 chambers and 800 cells were counted, the two methods paralleled each other closely. Counts made from oxalated venous blood or from free-flowing finger blood did not differ significantly. F.

The Production of Antibody by Patients With Chronic Hepatic Disease. Havens, W. P., Jr., Shaffer, J. M., and Hopke, C. J., Jr., J. Immunol. **67**: 347, 1951.

Following the intramuscular injection of a fixed amount of diphtheria toxoid, the amounts of antitoxin produced by 27 Schick-negative patients with chronic hepatic disease and by 36 Schick-negative control subjects with other acute and chronic diseases were measured by titration in the skin of rabbits. Patients with chronic hepatic disease developed 3 times as much antibody as the controls. There was no apparent relationship between the amounts of anti-

toxin produced and the age, clinical condition, degree of malnutrition, amounts and partition of serum proteins or resistance to intercurrent infections. Antibody production appeared to be a highly preferential function since, in certain cases, antibody protein replaced a large percentage of the globulin previously present, or was operative at the expense of serum albumin production. R. W.

Acute Antihistamine Intoxication in Children. Leeks, H. I.: Quart. Rev. Ped. **6**: 294, 1951.

The cases of acute antihistamine intoxication in children recorded in the literature are reviewed. The toxicity appears to be unrelated to the known pharmacologic properties of these drugs, such as their antihistaminic, antiacetylcholinic, or sympatholytic effects. The use of histamine and neostigmine as antidotes has been disappointing. There are some indications that antihistamine intoxication produces damage to tissue respiration and carbohydrate metabolism. At the present time, treatment of toxicity is empiric and only a symptomatic approach is possible. H.

Effect of Pertussis, Diphtheria Toxoid and Salmonella Immunization on Experimental Poliomyelitis. Milzer, A., Weiss, M. A., and Vanderboom, K.: Proc. Soc. Exper. Biol. & Med. **77**: 485, 1951.

Mice were inoculated intracerebrally with a strain of poliomyelitis virus. On the first, third, and fifth days after inoculation, the mice were injected intraperitoneally with a combination of pertussis vaccine and diphtheria toxoid, or with pertussis vaccine alone. The average incubation period before the onset of paralysis was considerably less in the vaccinated groups than in the control group. There was no significant difference in the average survival time after the onset of paralysis between the vaccinated and control mice. When these experiments were repeated with a Salmonella typhimurium vaccine, equivocal results were obtained. However, when the Salmonella vaccine was injected intravenously or intracerebrally, the incubation period was significantly decreased. Intraperitoneal injections of procaine penicillin in peanut oil had no apparent effect on the incubation period before onset of paralysis. B. S.

Relative Effectiveness of Pantothenic Acid and Panthenol in Stimulating Antibody Response of Pantothenic Acid-Deficient Rats. Ludovici, P. P., and Axelrod, A. E.: Proc. Soc. Exper. Biol. & Med. **77**: 530, 1951.

Panthothenic acid-deficient rats were treated with calcium pantothenate or with panthenol (the alcohol analogue of pantothenic acid). During the fifth week of treatment, these and untreated deficient rats were immunized with human erythrocytes and their hemagglutinin titers were measured. The untreated pantothenic acid-deficient rats demonstrated a marked impairment in antibody response. Pantothenic acid and panthenol were equally effective in overcoming the suppression of the antibody response in the deficient animals. Thus the quantitative conversion of panthenol into pantothenic acid by the rat was demonstrated. B. S.

Further Studies on the Use of Tissue Culture of Blood Leukocytes in the Clinical Evaluation of Bacterial Hypersensitivity of the Tuberculin Type. Blatt, H., and Nantz, F. A.: Ann. Allergy **8**: 622, 1950.

Cell suspensions of leukocytes were mixed with equal volumes of full strength thrombin and bacterial filtrate in a vaseline ring on a glass slide.

The mixture was sealed with a coverslip and incubated for 18 hours at 37° C. At the end of this time, leukocytes from normal controls were found to be viable, whereas white cells obtained from patients with a variety of diseases were found to be granular, stippled, crenated, or even dead when mixed with certain filtrates. It was presumed that patients whose leukocytes showed necrosis were bacterially sensitive to the specific filtrates causing the necrosis. When leukocytes from atopic patients were mixed with specific atopens, or with high concentrations of histamine or toxins, there was no evidence of necrosis. The filtrates of 30 strains of hemolytic streptococci Group A of Lancefield's classification were used. Of 2,000 tests run in duplicate, 213 became necrotic or positive. Most patients were positive to 2 or 3 strains. Of 300 patients with asthma, arthritis, rheumatic fever, sinusitis, allergic rhinitis, recurrent iritis, periarteritis nodosa, Christian Schueler disease, and chronic "id" infections, 158 were considered positive. Of 158 patients on whom desensitizing therapy was initiated with the specific filtrate, 56 discontinued treatment. Of the remaining 102 patients only 6 failed to show signs of sustained improvement under this therapy. Of 36 patients who were "apparently clinically cured," 33 had negative tissue culture tests when these were repeated in duplicate. Reactions to this type of therapy were reported as mild. E. W.

The Surgical Importance of Schoenlein-Henoch Disease. Gordon, E. T.: U. S. Armed Forces M. J. **2**: 1845, 1951.

Two cases of Schoenlein-Henoch disease were observed within one year among a total of 2539 hospital admissions. The first patient had severe abdominal pain and a skin rash. The rash responded rapidly to the administration of Benadryl. Joint manifestations and purpura appeared subsequently, but regressed within a short time. The second patient presented a difficult diagnostic problem because there were no skin lesions, the abdominal pain was severe and persistent, and was not relieved by the subcutaneous injection of 1:1000 epinephrine. The eosinophil count was 9 per cent, and the tourniquet test was normal. An exploratory laparotomy was performed when the symptoms grew increasingly severe. The small bowel and mesentery were edematous and many subserosal hemorrhages were noted, particularly in the terminal ileum. Severe symptoms continued postoperatively and the patient developed a purpuric rash which did not respond to epinephrine, Benadryl, vitamin C, or vitamin K. Cortisone, 100 mg. 3 times daily, appeared to have a beneficial effect on the symptoms. F.

The Occurrence of Nor-Epinephrine in the Chinese Toad Venom. Lee, H. M., and Chen, K. K.: J. Pharmacol. & Exper. Therap. **102**: 286, 1951.

Ch'an Su, a commercial preparation of Chinese toad venom used in medicine for centuries, is known to contain epinephrine. By chromatography and biologic assay, this toad venom was found to contain levo-nor-epinephrine also, in amounts of from 2 to 4 per cent of the l-epinephrine present. K.

The Effect of Antilymphocytic Serum on Suspensions of Lymphocytes In Vivo. Woodruff, M., and Forman, B.: Nature **168**: 35, 1951.

An antilymphocytic serum was prepared in rabbits by subcutaneous injections of suspensions of rat lymphocytes. A rat injected intraperitoneally with this serum developed a marked leukopenia within 4 hours. A rat injected with the serum of a normal rabbit showed no change in the lymphocytic count. Lymphocytes from rat lymph nodes were washed and suspended in Tyrode

solution and then mixed with the antilymphocytic serum. Counts were made immediately after the mixing and at intervals of 2 and 18 hours after incubation of the mixture at 37° C. There was no significant change in the total number of lymphocytes or in the proportion of dead (stained by eosine) and unstained lymphocytees in this mixture or in control mixtures. The leukopenia effect of the antilymphocytic serum in vivo apparently is not mediated by an adrenocortical mechanism, since it occurred even in adrenalectomized animals. G.

Negative Effects of Vitamin B_{12} on Blood of Healthy Individuals, With Special Reference to Eosinophils. Muehrcke, R. C., and Kark, R. M.: Proc. Soc. Exper. Biol. & Med. **77**: 144, 1951.

The administration of whole liver or liver extracts has been shown to produce an eosinophilia in human beings. The authors treated normal adults and children with large doses of Vitamin B_{12}. No eosinophilia was noted and it was concluded that vitamin B_{12} is not the factor in liver which stimulates the increase of circulating eosinophils. M. S.

Leocillin (Benzyl-Penicillin-Beta-Diethylaminoethylester Hydriodide). Jenson, K. A., Dragsted, P. J., Kiaer, I., Nielsen, E. J., and Fredericksen, E.: Acta path. et microbiol. Scandinav. **28**: 407, 1951.

Leocillin (benzyl-penicillin-beta-diethylaminoethylester hydriodide), a new antibiotic, was found to show a striking predilection for lung tissue when injected subcutaenously. Although blood levels obtained with Leocillin were lower than those obtained with either sodium or procaine penicillin, the concentration in the lungs was five times higher. O/S is designated as the ratio between organ concentration and blood serum concentration. In lungs, O/S is ten times higher for Leocillin than for sodium penicillin; in the liver and spleen O/S is approximately the same for both drugs. Large quantities of Leocillin are excreted in the sputum. H.

Sensitivity to Tuberculin. Cruickshank, C. H. D.: Nature **168**: 207, 1951.

Guinea pigs were sensitized by intracutaneous injections of heat-killed tubercle bacilli or B.C.G. vaccination, until they showed a reaction of 1.5 to 2 cm. in diameter to 1:100 old tuberculin. Skin explants 1 to 2 mm. square from these animals and from normal ones, were cultivated in a fluid medium for periods up to 3 days. No difference could be detected in the amount and quality of growth between the sensitized and nonsensitized skin even in the presence of very high concentrations of tuberculin in the culture medium. The author suggests that whatever the cause of the tuberculin reaction may be it is not associated with a direct cytotoxic effect of tuberculin upon the sensitized skin. I. G.

The Effect of Allergy Management on Growth and Development of Allergic Children. Welsh, J. B.: J. Pediat. **38**: 571, 1951.

The effect of allergic management on the progress of growth and development of 34 allergic children was studied. The children ranged in age from 1.5 to 11.5 years when first seen and were followed for from 1 to 8 years. As determined by Wetzel Grids, 32 of the 34 patients advanced at either a satisfactory or improved rate.

These findings are not in accord with previous reports demonstrating disturbances of growth in allergic children, with or without allergic management. J. S.

Eosinophilia and Diagnosis of Allergic Disorders. Lecomte, J.: Rev. med. Liege **6**: 682, 1951.

The author states that the presence of eosinophilia is not necessarily indicative of an allergic reaction and has no diagnostic value in allergic disorders. Eosinophilia (more than 400 eosinophil cells in 1 cubic millimeter of blood) may be associated with the typical allergic diseases, but also with pregnancy, Hodgkin's disease, secondary carcinoma of the liver, scarlet fever, copper and benzene poisoning, some forms of tertiary syphilis, leprosy, and Duhring's disease. Generalized or localized eosinophilia is said to be produced by molecules foreign to the organism, which at certain times have antigenic properties and at other times do not have this property. H.

Absorption of Corticotropin (ACTH) by Respiratory Route. Grau, J., Larrain, C., and Duque, I.: Rev. med. de Chile **79**: 588, 1951.

ACTH was administered by aerosol to 6 normal individuals and to 3 patients with bronchial asthma. The lowering of the circulating eosinophils provided an index of pulmonary absorption of ACTH. The aerosol, containing 32.5 mg. of ACTH in 2 c.c. of distilled water, was given in a single dose. Oxygen under pressure vaporized the solution during inspiration. A valve prevented elimination of the aerosol during expiration.

In all 9 cases, the eosinophile response was similar to that noted after the intramuscular injection of the drug. A drop in circulating eosinophils occurred within the first 2 hours after ACTH aerosol was administered. H.

Circulating Antibodies in Vitamin Deficiency States. Pteroylglutamic Acid, Niacin-Tryptophan, Vitamin B_{12}, A, and D Deficiencies. Ludovici, P. P., and Axelrod, A. E.: Proc. Soc. Exper. Biol. & Med. **77**: 526, 1951.

Rats deficient in pteroylglutamic acid, niacin-tryptophan, vitamin B_{12}, vitamin A, and vitamin D were immunized with a suspension of Group O, Rh positive human erythrocytes and their hemagglutinin titers were determined. The most severe impairment of antibody response occurred in the pteroylglutamic acid-deficient rats. A moderate impairment of antibody response was noted in the niacin-tryptophan-deficient and vitamin A-deficient animals. In contrast, vitamin B_{12} and vitamin D-deficient rats and their respective controls showed similar hemagglutinin titers. B. S.